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## **Shifting Centres: Pedagogical Relations in the Era of Big Data**

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**Abstract:** *The paper presents a cautious argument for re-thinking both the nature and the centrality of the one-to-one teacher/student relationship in contemporary pedagogy. A case is made that learning in and for our times requires us to broaden our understanding of pedagogical relations beyond the singularity of the teacher/student binary, and to promote the connected teacher as better placed to lead learning for these times. The argument proceeds in three parts: first, a characterization of our times as defined increasingly by the digital knowledge explosion of Big Data; second, a re-thinking of the nature of pedagogical relationships in the context of Big Data; and third, an account of the ways in which leaders can support their teachers to become more effective in leading learning by being more closely connected to their professional colleagues.*

## **Shifting Centres: Pedagogical Relations in the Era of Big Data**

More than thirty years have passed since phenomenologist Max van Manen made the claim that pedagogy affords “the most profound relationship an adult can have with a child” (van Manen, 1982: 290). Over that period much has changed in terms of what it means for any of us to conduct a relationship, pedagogical or otherwise. The opportunities for ‘relating’ have burgeoned, and the nature of ‘relating’ has been transformed. We can now face each other on Facebook, tumble around on Tumblr, look snappy on Snapchat. Given the massive cultural shifts we have seen since the advent of the Internet, it seems timely to revisit the nature of pedagogical relations within the conditions of possibility that are afforded by this, the Era of Big Data (Silver, 2012). Is van Manen’s focus on the centrality of a “profound” adult-child relationship still valid; or is pedagogy being

so re-shaped as a field of relational activity that its 'central' relationship is now less discernible in, and even less significant to, the learning landscape? If so, what difference does it make to educational leaders who are seeking to optimise the quality of teaching and learning in their schools?

What follows is a cautious argument for re-thinking — indeed, for *unlearning* — both the nature and the centrality of the one-to-one teacher/student relationship in contemporary pedagogy. A case is made that learning *in* and *for* our times requires us to broaden our understanding of pedagogical relations well beyond the singular teacher/student binary. As classroom walls become more permeable, and as the neatness of binary categories like 'adult-or-child', 'knower-or-learner' dissolves, so too does the proposition that pedagogy still retains a core relationship of an individual teacher to an individual student. Put another way, van Manen's depiction of an optimal pedagogical relationship is looking decidedly outmoded in the shifty, inter-connected and crowded landscape of short-term relational activity that characterises twenty-first century learning environments.

My argument for revisiting pedagogical relations unfolds in three parts: first, a characterisation of our times as defined increasingly by the digital knowledge explosion we call Big Data; second, a re-thinking of what constitutes a pedagogical relationship in the context of Big Data; and third, an account of the ways in which relational priorities may be more usefully reconceptualised and supported by leaders of twenty-first century learning.

### **Big Data, Big Change**

There is nothing surprising about the assertion that we have been witnessing, in the three decades since the advent of the Internet, an exponential proliferation and transformation of information across the globe. Most of us have been experiencing this transformation as a new set of social and cultural imperatives shaping the ways we now connect and engage with others, with work, with government, and with a host of organisational systems. We have seen such systems transformed from vertical hierarchies of management and vertical

supply and demand chains to horizontal networks in which the flow of data is unprecedented in terms of its nature, volume and speed, and in which any node that does not add value can be by-passed.

The social and cultural transformations wrought by the Era of Big Data are overturning not only the cultural logic of the supply-and-demand chain, but also concomitant linear-cumulative patterns of living, learning and earning. It follows that many of the metaphors we once used to characterize learning are past their use-by date. As Zigmunt Bauman (2004) argued a decade ago, traditional notions of learning as synonymous with the solidity and predictability of ‘rat-in-the-maze’ experimentation no longer apply:

What [Bauman asks]...if the maze were made of partitions on castors, if the walls changed their position fast, perhaps faster yet than the rats could scurry in search of food, and if the tasty rewards were moved as well, and quickly, and if the targets of the search tended to lose their attraction well before the rats could reach them, while other similarly short-lived allurements diverted their attention and drew away their desire? (p.21)

This, he argues, is how learning has been disrupted by a *liquid-modern* social world. It is a world in which the capacity to learn and reproduce time-honoured social and relational behaviours is no longer the key to future success that it once was. Instead, social relations and forms of exchange are constantly being assembling, dismantled, and re-worked, with the focus of learning activity moving beyond the individual to communities which are themselves liable to fragment and/or merge with others. In higher education, for example, we are seeing cost-cutting moves in colleges and universities to supplant a variety of “nameless, small-time” academic teachers with one MOOC [massive, open, on-line course] lecturer whose “class enrollments may soar upward of 100,000” (Bromwich, 2014: 51). As “the academic equivalent of a rock star”, so the argument goes, the MOOC lecturer is differentiated pedagogically by teaching “without the impediment of fellow students or a teacher’s intrusive presence in the room” (Bromwich, 2014: 50). In other words, the embodied teacher is being expunged from any number of pedagogical settings that are being transformed to

service ‘any time, anywhere’ learning.

We might well want to ask about the likelihood of a profound one-on-one teacher/student relationship being formed in this ‘rock-star-to-thousands’ pedagogical context. Moreover, we might come to question the necessity of such a relationship to fast-paced learning in liquid-modern times. Just how troubled should we be by the statistic that “only 14% of graduates recalled having a professor who made them excited about learning and encouraged them” (Selingo, 2014:1)? Has a “profound” pedagogical relationship always been for the lucky minority? Was it ever thus, or could this be a symptom of the increasing irrelevance of ‘profound’ teacher/student relationships to new modes of ‘just-in-time, just enough’ learning?

Much about the future of our living, learning and earning relationships is unforeseeable, given that a Western life/career trajectory is no longer a predictable pathway in which learning is completed before long-term salaried work begins. According to sociologist Richard Sennett (2006), we will continue in this century to be under pressure to improvise a life-narrative without any sustained sense of self or continuous social identity. Work culture is now less willing or able to reward craftsmanship — that is, to reward an individual’s talent for doing one thing extremely well over an extended period. It follows that hard-earned skills have an increasingly short shelf-life, particularly in fields closely related to technology, sciences and advanced forms of manufacturing.

As long-term, stable employment recedes, and fast-paced work transitions become the norm, we now find ourselves paying closer attention to developing and managing a wider range of short-term relationships while migrating from place to place, job to job and task to task, developing new talents as economic and skilling demands shift. Mediated through digital technology, work, like learning, becomes increasingly *what we do at any time* rather than *a place we go at a particular time*. And this changes the nature of the relationships that are possible and, indeed, optimal for living, learning and earning at speed.

Much of this cultural transformation has, for better and worse, been made possible by the Internet, which has had a revolutionary impact on our communication networks since the mid-1990s. Many of our young people have grown up alongside Hotmail (1996), Google (1998), Napster (1999), the iPod (2001) and the Xbox (2001). They have had access to the iPhone, Playstation3 and Tumblr since they were in their early teens, and Facebook, Twitter and the iPad soon after. Since 2010, YouTube has been their primary source of information. Learning about the world does not involve reading a newspaper or watching free-to-air television — for this generation the *World is YouTube*.

Speed of access really matters to the digital generations. They do not think it a miracle to search 100 billion pages in a few seconds — indeed, they are more likely to experience increasing frustration by what they perceive as a delay or slowness of access or delivery. Whether it's hair-braiding or horse-breeding, algorithms or anklets, they expect to find whatever information they want and precisely at the time they need it. Given this, it is unsurprising that many teachers are now building the resources of YouTube into their pedagogical repertoire to 'flip' classrooms from teacher-led verbal instruction to YouTube-supported visual demonstration. The teacher's role becomes one of co-evaluator of the quality and usefulness of the YouTube information alongside students, rather than prime knower. In other words, the learning process is more likely to begin with access to information from the virtual world rather than with exposition from a teacher.

The virtual world is, however, not without its drawbacks when it comes to information access. The promise of instant 'delivery' of meaningful, relevant data, according to prediction analyst Nate Silver (2012), is likely to be undeliverable in practice. In a complex and unpredictable world, Silver asserts that all of us will struggle to differentiate the information that is really useful for complex problem-solving from the overwhelming amount of useless, extraneous, impeding or misleading information that is proliferating globally at a much greater rate.

As Silver explains it, information growth is rapidly outpacing our understanding of how to process it. We are less and less likely to distinguish *Signals* — the very small amounts of useful information we really need, from *Noise* — all the rest of the trivial, misleading and useless information that continuously bombards us. There are real dangers, he asserts, for the current student generation and all generations to follow, if and when learning is equated with accessing bits of information that are readily available on the Internet. The combination of data overload and a burgeoning Noise-to-Signal ratio mean that everyone needs to be increasingly selective in deciding what information to pay attention to, and more adept in differentiating it from the noise. Given that this involves thoughtfulness, judgement and hard work, we are more likely to cut corners by ‘cherry-picking’ the information that best aligns with our preconceived views of the world, and those of our close circle. We tend to ignore the rest, and in doing so, contribute to the growing trend to sectarianism that is an effect, among other things, of information overload. In general, according to Silver, we find political, religious and cultural allies in those who make the same choices as we do. By implication, we may well consider those who make different choices alien, even dangerous.

Yet the digital revolution is only just beginning. As technology researcher Moshe Rappoport (2012) explains, it is not just the issue of the *Veracity* of Big Data that creates problems for learners, but the *Volume*, *Variety*, and *Velocity* of the data we now generate that makes it impossible for educators to create a knowledge base with any sort of sustainable shelf-life. *Volume* matters because the current rate of data generation will continue to grow exponentially. *Variety* will matter, because, of the two broad types of data we currently engage with, *data ‘at rest’* and *data ‘in motion’*, the latter is exploding as more smart objects are developed (eg, storage spaces that make business decisions) and as software becomes more adept at deep analytics. Simply put, computers are starting to ‘get’ nuance. The *Velocity* or speed at which data moves is also growing exponentially; it is predicted to be ten thousand times faster than today if it is to meet the needs of knowledge creators in commerce and industry in the next decade.

There is no doubt that, in just a few years, our technology will be many times more powerful than it is today. Unbreakable, wearable devices are already being combined with long-term permanent storage in the form of batteries that are virtually transparent, allowing nano-generators not only to be sewn into clothing but also inserted into body organs. According to educational reformer and entrepreneur Lee Crockett (2013), we will soon see molecular robots that can be injected into the body to kill cancer on a cell-by-cell basis, but we will also run the risk of other ‘intelligences’ being introduced into our biological make-up without our knowledge or consent. In short, the blurring of the Internet and reality — *the Singularity* — is very close indeed, and with that comes a plethora of positive and negative possibilities when it comes to ‘relating’ to others.

### **A ‘knowing’ relationship**

For increasing numbers of people, both young and old, being connected to peers via social media networks is *the* attentional priority. With billions of people chatting on Facebook — more, indeed, than the entire population of the world a century ago — it is possible to claim to know someone else, to have a relationship with that person or thousands of others, without ever having to meet them face to face. The idea that this constitutes a ‘lesser’ way of relating is not necessarily shared by young people, many of whom express a preference for the ‘virtual’ relationships in their personal lives. They may well choose to text a friend rather than talk to them, or to watch a ‘virtual’ teacher on a screen rather than to be present in real time in a classroom or similar pedagogical space. In other words, what previous generations may perceive as a ‘loss’, ie, access to the physical presence of a teacher, may be experienced by the Millennial generation as a pedagogical gain (see Main, 2013).

For Millennials, accustomed to find what they want at speed, the absence of an embodied teacher has real advantages. Virtual space allows them to ignore or bypass any oral or written introduction or preamble, to disengage quickly from anything ‘boring’, and to re-engage just as quickly if it becomes worthwhile. Flexibility is the key to maintaining their interest and engagement. It follows that



many prefer to do their learning in bite-sized chunks. As journalist Nina Hendy puts it:

Volumes of dense static learning content are increasingly out of touch with the modern, real-time enterprise and are of little interest to millennials.... like a live news ticker running across the bottom of a television screen, learning practices last for a moment before evolving with the flash of new technologies encouraged by the millennial workforce. (Hendy, 2014: 26)

The dominant mode of 'hands on, plugged in' engagement favoured by millennials allows them to work in virtual groups that share their interests and their idea of fun (Beck and Wade, 2006). Much of their learning action is therefore sideways, slippery and short-term rather than vertical, linear and lasting. It follows that their social relationships are generally of a similar type.

A growing body of socio-cultural research is becoming more attentive to the not-so-welcome effects of this shifty relational geometry. For example, American technology commentator Nicholas Carr (2010), in his book, *The Shallows*, asserts that the Internet works as an ecology of disruptive, distracting and highly seductive technologies for changing what counts as intellectual work and, indeed, what is coming to count as thinking capacity. Carr sees the sort of deep and sustained thinking that we have associated with intellectual achievement as being problematically undermined by the Net's invitation to "the permanent state of distraction that defines the on-line life" (p.112). His concern is that the "buzzing mind" so characteristic of digital times is an unwelcome effect of the Net's capacity to "seize our attention only to scatter it" (p.118). While Carr acknowledges the unique contribution of digital tools to an expanding social universe, he is nevertheless unequivocal about the dangers he sees in the emergent character of a Net-based social and intellectual world. The threat, according to Carr, is the Internet's capacity to turn us into the human equivalent of lab rats, constantly pressing levers to get the next tiny pellet of gratification with which to fill our lives.

Carr is not the only commentator expressing ambivalence about the trend to "mile-wide, inch deep" (Munro, 2013) learning and relating. In *The Age of*

*Absurdity* (2010), Irish author Michael Foley argues that sustained thinking for deep understanding has become repugnant to a fast moving, pleasure-seeking, self-absorbed world more oriented to game-playing than gravitas. American academic David Bromwich (2014) concurs. “How much”, he asks ruefully, “do we want teaching and learning to resemble a video game?”

Yet such ambivalence is dismissed by a growing number of optimistic, even passionate advocates of ‘virtual’ learning affordances. “Personalized learning environment facilitators” like Robin Britt (in Rotella 2013: 2) are enthusiastic trainers of American teachers in the transformative possibilities of learning through the use of digital tools such as Tablet PCs. According to advocates like Britt, tableted learning makes it possible for teachers to ‘know’ their students more intimately because they have much better means of understanding the what and how of their students’ learning. Among the enhanced possibilities, they include: games that know what a student has read, and can strategically sprinkle a particular word in her path based on how many times the research says she needs to see a new word in order to learn it; ‘gaze tracking’ and measurement of pupil dilation that will revolutionize the gauging of cognitive response by making it possible to determine exactly what a child is reacting to on the screen; and, a growing stream of information, down to individual keystrokes, which can be analyzed to yield a picture that will eventually progress in complexity from a list of words a student looks up to a full-blown portrait of a developing mind — in short, a capacity for each student to “generate the intellectual equivalent of a fantastically detailed medical chart” (Rotella, 2013: 5). All this promises a means by which a teacher can ‘know’ a student (at least in a cognitive sense) that is unprecedented in its forensic detail.

I want to consider some implications for the nature of the pedagogical relationship that arise from this pedagogical vision of the “tableted” child and teacher as “personalized learning environment facilitator”. The mention of “a detailed medical chart” as an outcome of tableted pedagogy is a reminder of the ways in which the providers of personal professional services, like medical practitioners, have shifted the attentional economy of their daily work, spending less time looking at or engaging with embodied patients during consultations,

and more time paying attention to the data *about* their patients on their computer screens. This interpersonal minus is at the same time a professional plus. By shifting attention from *the patient as a physical presence*, to *data flow about the patient*, a doctor might reasonably expect to provide a more targeted professional service than can be provided through social interaction with the patient alone. 'Real-time' interpersonal exchange is cut in order to access more quality data. The logic here is that the transmutation of the doctor-patient relationship from 'good morning' into 'good data' works in the interests of both greater efficiency and better (ie, more well-informed) clinical service. While an older generation might well bemoan the loss of a more intimate interpersonal exchange with a family doctor, to a fast-paced data-driven younger generation it is more easily accommodated as the new norm.

It is a cultural logic that also pertains to developmental knowledge when applied to 'third world' relationships. As cultural anthropologist Piers Vitebsky (1993) points out, 'development' has meant the inevitable displacement of the shaman's offer of a 'direct' link to the spirit of the deceased, with the counsellor's offer of support to move on *after* the deceased. Vitebsky notes that a client could be forgiven for experiencing this transmutation as the displacement of a more profound, direct relationship with a 'lesser', more indirect one (p.100). In digital times, progress means using data to move as quickly as possible to generate scientific diagnoses and remediation, so 'gaze tracking' diagnosis of a student's eye movements, for example, comes to stand as a more value-added way of 'knowing' a learner than an embodied conversation could be. The time-consuming, meandering nature of interpersonal relations of the sort found in vibrant indigenous communities looks decidedly less relevant in the era of Big Data, as difficult to enact as to defend.

To return to van Manen's terminology, the conditions of possibility for enacting a 'profound' pedagogical relationship make it look both less likely and less necessary to learning in this century. For some time now, we have seen professional-to-client relationships transmuted, through flows of information and digital affordances, into relationships with *data about* individuals. Does it

still make sense, then, to locate “profound relationships” at the centre of pedagogical imagining, or is there a more appropriate way to characterize pedagogical relations, without being guilty of either demonizing or glorifying the pedagogical affordances of digital media?

First, it needs to be acknowledged that the practice of paying attention to the data *about* a client at the expense of real-time interpersonal interaction has been on the rise since well before the advent of the Internet. It was the rise of ‘risk society’ in the last century, according to Ulrich Beck (1992), rather than digitization, that initiated this change in professionals’ attentional economy. For some decades now, risk-conscious organizations such as schools and hospitals have required their workers to be more amenable to audit and thus more accountable for minimizing the likelihood of ‘unprofessional’ conduct in the workplace.

Amenability to audit, as a risk management imperative, has seen expert knowledge — for example, that of a credentialed teacher, librarian, social worker, medical practitioner — become more regulated, standardized and routinized, and this in turn has brought a new visibility and accountability to professional conduct. It follows that we now have more explicit frameworks for diagnosing, classifying and treating our ‘clients’. The purpose of such frameworks is to mitigate the danger posed by claims of unprofessional service or resource wastage against an individual or organization (Ericson & Haggerty, 1997). Thus the ‘know-how’ of the unregistered amateur that was once welcomed as an extra pair of hands in the school library, hospital or welfare agency — is now a potential risk to the maintenance of professional (risk-minimizing) standards. A ‘helping hand’ may be refused, even where it is needed, if it is not amenable to audit.

In a *risk society*, professional ‘experts’ (registered teachers, doctors, nurses and so on) are distinguishable from ‘non-expert’ amateurs by their capacity to be regulated and to self-regulate according to generic modes of approved behavior with which they are well acquainted through their training

and appraisal. This means paying less attention to students/clients/patients as idiosyncratic individuals, and more attention to the pre-designated factors that allow professionals to 'know' them as *cases for intervention*, involving more or less risk. According to sociologist Robert Castel (1991), case-based professional service mutates the *practitioner-client* relationship into a relationship of *practitioner-to-information*. As Castel puts it:

The essential component of intervention no longer takes the form of the direct face-to-face relationship between the ... professional and the client. It comes instead to reside in the establishing of flows of population based on the collation of a range of abstract factors deemed liable to produce risk in general .... These items of information are then stockpiled, processed and distributed along channels completely disconnected from those of professional practice, using in particular the medium of computerized data handling. (Castel 1991: 281, 293)

With pressure to transmute the work of teaching into the sort of data analysis and prescribed activity advocated by TabletPC sponsors, the relational priorities and possibilities for both teacher and student *cannot but shift*. And there are both opportunities and threats involved — opportunities to open up relational possibilities beyond the singular teacher/student relationship, and the threat of less meaningful and sustainable learning in digitally enhanced pedagogical settings.

### **Schools as learning communities**

I want to advance the idea that while there is much that students can gain from the 'digitally enhanced' classroom, there may be more to gain from a deeper appreciation of the notion of what the term 'enhancement' connotes for student learning. It may well be that, when we locate the teacher–student relationship ('digitally enhanced' or not) as a pedagogical sun around which all other relational engagements orbit, we downplay or at least fail to fully appreciate the value of *collegial and collaborative teacher relationships*. Yet peer-to-peer teaching relationships are emerging in recent research findings as much more

significant to student learning than we previously understood. Following a recent large-scale study of American schooling cultures, researcher Greg Anrig (2013) concluded that collaborative teacher cultures make a more positive difference to student learning outcomes than the mandating of any particular digital tool or learning platform. “Successful schools”, he notes, “focus on how teachers and administrators interrelate with each other, emphasizing a much higher degree of ongoing collaboration, communication, coordinated responses to testing data, and structured problem-solving” (Anrig, 2013: 3). He goes on to insist that technological affordances make a positive difference to learning *only if and when* there is a vibrant and collaborative professional culture within a school. Such cultures are characterized by systematic school-wide approaches to improvement in professional teaching practices that lead to better learning outcomes for staff and students alike.

Devices like Tablet PCs *can and do* enhance student learning in such an environment. However, they appear to have less impact on learning outcomes if student use the device as isolated individuals “alone together” (see Turkle, 2010). The phenomenon of being *alone together* — of being in physical proximity to others while being virtually oblivious to them — is one that has come in for critical comment as a negative effect of the screen fixations of the young. Yet it is worth noting that being “alone together” could be argued to describe quite accurately the way in which teachers have traditionally spent their working days in schools. According to psychologist Robert Evans (2012), the profession of teaching has always been hamstrung by the “entrenched norms that prevail among teachers... those of autonomy and privacy, not those of open exchange, cooperation, and growth” (p.2). In other words, a teacher’s identity in the traditional classroom is like Gulliver in Lilliput — a singular, isolated adult in a land of little people.

In ‘my’ classroom, with ‘my’ kids, teaching ‘my’ subjects ‘my’ way, it is too easy for the singular adult teacher to remain cut off from what is happening in the other classrooms, even those next door or across the corridor, and thus cut off from opportunities for peer-to-peer learning. Yet the preference for separateness in teacher culture lingers in many quarters as a marker of the

devoted or dedicated teacher. It is unsurprising that iconic teachers like John Keating in *The Dead Poets Society*, or Jaime Escalante in *Stand and Deliver*, or Mark Thackeray in *To Sir with Love*, are depicted as singular figures disconnected from, and solving pedagogical problems *despite*, their peers. ‘Teacher-as-hero’ valorizes time spent in the cloistered space of the classroom ‘getting to know my students’, and militates against the investment of time and attention in the sort of collegiality that Anrig, Evans and others argue is so vital to pedagogical improvement in this era.

‘Alone together’ in a school, the ‘good’ teacher interacts with their students in the spirit of van Manen’s dictum, devoting their time, energy and attention to building warm, caring relationships year after year. Yet, while a warm and caring teacher-student relationship need not and should not be a casualty of digital times, it is no longer sufficient *of itself* to enhance the learning of either teacher or student in digital times. The sort of ‘low threat, high challenge’ learning opportunities (McWilliam & Taylor, 2013a) necessary for building a disposition to self-managed learning within and beyond the classroom do not arise from caring alone, but from the application of pedagogical imagination to designing highly engaging tasks (with or without digital tools) that have enabling, sustainable learning outcomes. Where once teachers could recycle their activities year after year, confident as ‘knowers’ and having little need to update their own learning (including their learning about teaching), the transforming technological landscape means that active engagement with networks of professional peers has shifted from the margins of teacher consciousness — an optional pedagogical extra — to take on a significance that is unprecedented in the history of the profession.

That said, it is easier to acknowledge the significance of teachers’ professional networking in theory than it is for teachers to enact it in practice. Lack of time is inevitably cited as a key constraint when it comes to a teacher’s own learning through collegial conversations. This pressure is exacerbated by the custodial demands made of all teachers as professional care-givers of minors (McWilliam & Taylor, 2013b). Teachers are keenly aware that *in loco parentis* means that they are legally bound to be physically present to their students at stipulated

times – they are not free to move away to consult with colleagues as the mood takes them. Moreover, formal professional development, when it occurs, is more likely to be experienced as a brief block of ‘student-free’ time with a visiting ‘expert’ speaker than a recurring space for meaningful and timely dialogue. Little wonder that today’s teachers rarely greet professional development days with unbridled enthusiasm!

### **Congenial or collegial?**

While many teachers continue to work in splendid isolation from each other, there is no doubting the efforts being made by progressive professional associations and employing organizations to connect teachers to wider professional networks within and beyond their own workplaces. Yet peer-to-peer learning continues to be an uncomfortable cultural space for teachers. As Robert Evans explains, changing teachers’ professional relationships in ways that enhance collaboration and communication, ie, in ways that are *collegial* rather than merely *congenial*, is “enormously difficult and demanding” (Evans, 2012: 4–5). Ideological resistance in education can be particularly stubborn, coming as it does from altruistic individuals who have opted into a caring profession and are therefore more likely to have strongly held beliefs about what counts as ‘good practice’. Such resistance for some teachers takes the form of protecting their ‘true professionalism’ against ‘intrusions’ into their classroom routines, including suggestions for improving, expanding or update their pedagogical repertoire.

To flourish, according to Evans, teacher culture needs to prioritize the relationships that build professional collegiality, defined as “a foundation of *shared commitment to appropriate candor in the service of collective growth*” (Evans, 2012: 4). Teachers’ lack of robustness in this domain — their historical preference for Teacher-as-Gulliver — has served to blur the distinction Evans makes between *comfortable congeniality* (caring, altruistic, personable) and *collaborative collegiality* (open, candid, skeptical) in teacher culture. As Milbrey McLaughlin and Joan Talbert (2006) found when researching the cultures of a number of American schools, enhanced teacher professionalism that leads to better student learning outcomes is not produced simply out of warmth and



interpersonal teacher friendship. While a congenial working environment is a welcome feature of any school, it cannot be relied on as a resource for teachers' professional learning. The tendency to *affirm* like-minded others that is a feature of the altruistic culture of teachers (as with health workers) may well militate against candor, with the result that sub-optimal pedagogical practices are unlikely to be identified, examined, challenged or remediated. In other words, in a culture of peer-to-peer affirmation, the classroom can all too easily be left respectfully to individual teachers to manage alone, a private tutorial service rather than a site in which pedagogical improvement is constantly sought through authentic peer-to-peer collaboration.

### **Implications for school leaders**

If we accept the proposition coming from large-scale schooling studies that pedagogical relations in and for our digital times demand a more open and collegial teacher culture, then the cultivation of vibrant professional relationships — relationships that welcome candor and collaboration — has a very legitimate claim to be *the* school leadership priority for our times. While such a prioritizing does not de-legitimize the importance of teachers' relationships with their students, it nevertheless signals the end to a particular mental model of teaching, that of the singular teacher in a private pedagogical world of his or her own making.

What would it take, then, for a leader to work towards shifting this singular model of the good or effective teacher to one that is more connected and collegial? Leadership consultant Bill Martin (2007) asserts that paying attention to "Mental Models" is one of five domains of educational practice (the five being, in hierarchical order, Vision, Mental Models, Systemic Organization, Behavior and Events) that demand the attention of all school leaders. According to Martin, updating our mental models of an effective student, teacher, parent and leader ranks alongside Vision and Systemic Organization as a high attentional priority for school leaders. Unfortunately, as Martin points out, Behaviors and Events can all too often swamp a leader's attention. As in other domains of life, the urgent so often drives out the important.

Nevertheless, leaders can and do exert a great deal of influence over what counts as an effective teacher. They do so first and foremost through their own valuing of, and engagement in, professional teacher learning. New Zealand researcher Adrienne Alton-Lee's study of the effects of leadership on student outcomes (2008) is unequivocal in its finding that school leaders' promotion of, and participation in, effective teacher learning and development has more positive impact on student achievement than any other leadership activity. Her wide-ranging inquiry into the *Leadership Dimensions Derived from Studies of Effects of Leadership on Student Outcomes* leads her to prioritize above all other factors how important it is for school leaders "to actively develop shared commitment to goals that involve improving student outcomes and to actively promote and lead professional development" (2008: 3). She goes on to say:

Effectiveness is linked to the role of leadership in creating and sustaining the conditions for ongoing, outcomes-focused professional inquiry and learning in schools. Such conditions include enabling teachers to process new learning with others and providing teachers with multiple opportunities to learn and apply their new understandings in practice. (Alton-Lee, 2008: 3)

Alton-Lee's study provides strong evidence in support of the proposition that school leaders are more likely to improve their students' achievement by active participation in professional learning than by paying attention to other important matters as goal-setting, resourcing, planning, coordinating, and evaluating teaching and the teaching environment. Such research highlights the importance of school leaders as *lead learners*, not just line managers. While there is no doubting the burgeoning number of pressing demands on school leadership, the presence of a leader in the thick of the learning action cannot be an optional extra. In other words, the mental model of a school leader as an individual who sees professional development as 'good for my staff' and 'a good time for me to catch up on paperwork' is certainly ripe for unlearning! Simply put, professional collaboration in the interest of improved pedagogical practice is no less necessary to leaders than to anyone else in the school community.

## Leadership for learning

In taking an active role *within* the learning community, rather than above or outside it, school leaders challenge outdated ideas about what it means to be 'Head' of a school. Vertical lines of command and control are supplanted by a more horizontal geometry of supporting and directing. Likewise, in framing sustainable collegial conversations as an organizational priority, rather than as an optional frill on the edge of teachers' activities, school leaders send a strong message that effective teaching is inextricably linked to on-going and systematic professional collaborations.

It follows that the school leader, as a *lead learner*, has well-honed boundary-riding skills when it comes to protecting both personal and shared collegial learning time, allocating it to the pursuit of specific and agreed learning goals focused on improving professional practice. Meetings that are set up as learning opportunities become places where ideas and techniques are tested out in ways that have face validity — and catalytic validity — for everyone involved. An effective *lead learner* works towards this end by 'mining the anthill' of the group, ensuring that all practitioners involved see themselves in the picture of 'leading' and 'following', from the newest to the most long-term members of staff. Thus professional learning is enacted as an 'alongside' process, not a 'top down' one. Meanwhile, effective *lead learners* continue to scan the horizon for useful ideas, making use of conferences and on-line networks to inform themselves about new pedagogical possibilities. But the fundamental principle is the on-site, collegial conversation about effective practice in which everyone is a contributor and a learner. The point of leading learning is improving practice. And it is most likely to occur when the work of leading learning is valued, understood and acknowledged throughout the entire school-wide community.

Important work is now being done to make it possible for teachers to engage more collegially with each other in their own school environments with the objective of improving their teaching practice. In Australia, we have seen experimentation with '*Smart Building*' projects (see McWilliam & Taylor 2013b), predicated on teachers learning from each other in ways that make their practice

visible and share-able without any presumption of ‘best practice’ or ‘expert teacher’. Short (2–3 minute) teacher video clips that are tightly focused on a very specific pedagogical intention, are used as a basis for individual reflection, as an individual teacher’s record of their attempts to improve classroom practice, and as a catalyst for collaborative conversation about possible ways to improve the chosen technique or set of techniques. The point of the sharing exercise is not to showcase or to evaluate, but to learn. Importantly, the video clips are made *of* and *for* the teacher, not the student, giving teachers more time-efficient opportunities to *unlearn* both the timidity that is so often born of pedagogical isolation and the tendency to congeniality that simply affirms a colleague’s practice rather than gathering around the challenge of improving it. Used systematically over time, the process makes it possible for teacher to observe and plan for pedagogical progress, and to monitor and document that progress.

### **W(h)ither pedagogical relationships?**

The Era of Big Data has changed pedagogy forever. What was once the ‘central’ relationship around which teaching and learning practices revolved — the student-teacher relationship — has now been transmuted into multiple, moving and malleable interconnections and forms of social exchange. Where once teachers’ authority rested with their content knowledge and classroom management, increasingly it now rests with their capacity to model a learning disposition and to collaborate productively with their peers in the interests of a community of learners. And where once leaderliness was demonstrated by a tight grip of command and control on a supply and demand chain, it now demands that a leader maintains and models a collaborative learning disposition that is highly visible to all within the school as a learning community.

So what possibilities remain for van Manen’s “profound relationship” in our times? For some, the sort of transformative relationship Apple founder Steve Jobs had with his Grade Four teacher, Imogene “Teddy” Hill, (“She was one of the saints of my life” (Steve Jobs Bio, nd) will still be possible, particularly for young children who may need close personal supervision and care. Yet there is no

guarantee of that. Much has changed in cultural terms since Steve Jobs was at primary school and since van Manen wrote about the importance of ‘profound’ pedagogical relationships. Big Data has made a big difference to learning, and to learning environments, not only through the burgeoning volumes of information now available, or the speed with which it is generated, but also through the constantly shifting populations of players now involved at any particular moment in acts of knowledge creation and exchange.

In a ‘post-Gulliver’ era of pedagogical work, digital affordances offer multiple ways for the ‘connected’ teacher to tap into the thinking and doing of colleagues across the hallway or across the globe. If, as research appears to be showing, the education of young people is best served by schools in which the professional learning of staff is valued as highly as that of students, then the Era of Big Data is signaling something new about the nature of educational relationships — *that collegial professional relationships matter more to effective education than we have previously acknowledged or understood*. In reifying the student/teacher relationship as the only real relationship that matters, we have been slow to acknowledge the evidence that points to the importance of peer-to-peer teacher relationships.

The Era of Big Data prompts teachers and school leaders to serve their students and themselves better by making it a priority that teachers build more robust collaborative professional relationships with peers. If and when teacher-to-teacher relationships are fostered systematically, and flourish in the context of candor and the contestation of ideas, then they are equally worthy of the term ‘profound’. Simply put, it is time to unlearn the idea of the exemplary teacher as a singular heroic figure. It is the *collegially connected* teacher who is better placed to lead learning for these times.

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